ABSTRACT OF THE DISCLOSURE

The present invention comprises an optical communication system, including apparatuses and methods, which use coherence multiplexing to optically multiplex different signals that may have varying protocols or operate at different speeds, onto a single wavelength channel which is dense wavelength division multiplexed with other channels for optical communication. The apparatuses and methods of the optical communication system also enable the dropping and inserting of selected single protocol signals at intermediate sites of a DWDM communication link which is less costly and makes less wasteful use of optical wavelength channels for the communication of lower data rate information. The optical communication system comprises an optical DWDM multiplexer, an optical DWDM demultiplexer, an optical DWDM communication network communicatively connected to and interposed therebetween, a plurality of coherence multiplexer units connected for communication with the optical DWDM multiplexer, and a plurality of coherence demultiplexer units connected for communication with the optical DWDM demultiplexer.